

Work Order ID 151659***151659***

Page 1

Wednesday, October 05, 2016 3:08:59 PM

Item ID: 646.3014

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Blade

Start Date: 9/19/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 10/11/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: DAS 21 Date: OCT 06 2016
QC: 9-89 Date: OCT 06 2016

Tooling:

Date:

SPC (Y/N):

Date:

Run Start

NR1

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
Draw Nbr	Revision Nbr								
646.3000	N/C								

100

100

BAND SAW

0.00

Bandsaw

Memo

0.12

Jeaspa Bandsaw

Cut Blank at 2.670"

12

0

DAS
20
9-89

16-11-25

110

110

HAAS CNC VERTICAL MACHINING #1

0.16

HAAS 1

Memo

0.56

HAAS CNC vertical machine #1

1-Machine per folio FB150
DWG REV: N/C
FOLIO REV: AA

12

0

DAS
45
9-89

16-11-28

2- deburr and break all sharp edges except otherwise noted

KNIFE EDGE MUST BE SHARPENED USING STONE, REMOVE ALL
BURRS ON CUTTING EDGE

DAS
20
9-89

16-11-29

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :				MRB (QSI042) Approval Completed By _____ Lead hand / Supervisor Approval Verification _____ QC / QA Coordinator Approval _____	
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

Work Order ID 151659

Wednesday, October 05, 2016 3:08:59 PM

151659

Page 2

Item ID: 646.3014 Accept ***N900040100*** Setup Start ***NS1***
 Revision ID: Stop ***NS2***
 Item Name: Blade
 Start Date: 9/19/2016 Start Qty: 12.00 ***12*** Cust Item ID:
 Required Date: 10/11/2016 Req'd Qty: 12.00 ***12*** Customer:
 Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____ Run Start ***NR1***
 QC: _____ Date: _____ SPC (Y/N): _____ Date: _____ Stop ***NR2***

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
120	QC2- Inspect parts off machine FAI/FAIB	0.00				12	Ø		DAS 45 9-89 16-11-28
120									
QC	Memo	0.04							DAS 20 9-89 16-11-29
Quality Control									
130	QC8- Inspect parts - second check	0.00				12	Ø		DAS 44 9-89 16-11-29
130									
QC	Memo	0.04							
Quality Control									
140	Outsource process - Heat Treat	0.00				12			DAS 13 9-89
140									
Outsource1	Memo	96.00							
Outsource process - Heat Treat	HEAT TREAT AS PER DWG, SEE NOTE #3								
	ISSUE P/O: 34487								

DEC 01 2016

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐					
Date :		Step #:		QTY Effective :			MRB (QSI042) Approval Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval		
Description Work Order Deviation				Disposition					
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐							
		OTHER : ☐							

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____		DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐		AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐																																																													
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Description Work Order Deviation				Disposition				Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval																																																									
Root Cause		FAULT CATEGORY																																																															
Environment ☐	No Re-verification ☐	Pressure/Forced ☐	Temperature/Cure ☐	Power Loss/Surge ☐	Positioned Wrong ☐	Design ☐	Operator ☐	Bending ☐	Set-up ☐	Folio/Program ☐	Outside Dimensions ☐	Doc/Data ☐	Offset/Setup ☐	Centre Not Concentric ☐	BOM/Route ☐	Grain ☐	Over/Under tolerance ☐	Equip/Tooling ☐	Supplier ☐	Cracks ☐	Broken/Damage/Defect ☐	Weld ☐	Part Incorrect ☐	Handling/Pre ☐	Training ☐	Crimp/Kink/Ripple/Wave ☐	Inspection Incomplete/Unqualified ☐	Wrong Stock Pulled ☐	Part Lost/Missing ☐	Material ☐	Use for Testing ☐	Cuffs ☐	Contamination ☐	Out of Sequence ☐	Part Moved ☐	Internal Transport ☐	Poor Information ☐	Crushing ☐	Countersink ☐	Off-set ☐	Drawing ☐	Tribal Knowledge ☐	Rushing ☐	Heat Treat ☐	Cut Too Short ☐	Mislabeled ☐	Finish ☐	LOA ☐	Product Improvement ☐	Wave/Twist in Tube ☐	Instructions Incomplete/Unclear ☐	Fit/Function ☐	Misread ☐	Substation ☐	Process Improvement ☐	Marks/Chatter ☐	Drill Holes ☐	Misaligned/off center ☐	Turning Sequence ☐	Past Expiry Date ☐	Manufacturing Process ☐	OTHER :			
Misidentified ☐	Past Due ☐																																																																

Work Order ID 151659***151659***

Page 4

Wednesday, October 05, 2016 3:08:59 PM

Item ID: 646.3014

Accept

N900040100

Setup Start

NS1

Revision ID:

Stop

NS2

Item Name: Blade

Start Date: 9/19/2016 Start Qty: 12.00

12

Cust Item ID:

Required Date: 10/11/2016 Req'd Qty: 12.00

12

Customer:

Reference:

Approvals: Process Plan: _____ Date: _____ Tooling: _____ Date: _____

Run Start

NR1

QC: _____ Date: _____ SPC (Y/N): _____ Date: _____

Stop

NR2

Sequence ID/ Work Center ID	Operation Description	Set Up/ Run Hours	Tool ID	Tool #	Plan Code	Accept Qty	Reject Qty	Reject Number	Insp. Stamp
170	QC14- Inspct Spray Paint	0.00							
170									
QC	Memo	0.04							
Quality Control									
									DAS 38 9-89 DEC 16 2016
180	Identify as per dwg & Stock Location: <u>CK102</u>	0.00							
180									
Packaging	Memo	0.02							
Packaging	***IDENTIFY AS PER APICAL MPP-120 BY STAMPING P# AND REV***								
									12 DEC 19 2016 DAS 6 9-89
190	QC21- Final Inspection - Work Order Release	0.00							
190									
QC	Memo	0.02							
Quality Control									
									DAS 21 9-89 DEC 19 2016 mf 10-12-19

DQA: _____ Date: _____

WORK ORDER NON-CONFORMANCE / UPDATE



QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :			MRB (QSI042) Approval
Description Work Order Deviation		Disposition			Completed By Lead hand / Supervisor Approval Verification QC / QA Coordinator Approval
Root Cause Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐ No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐		FAULT CATEGORY Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐ Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐ Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Mislabeled ☐ Fit/Function ☐ Misaligned/off center ☐ Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐			
		OTHER :			

Picklist Print

Wednesday, October 05, 2016 3:08:58 PM

Work Order ID: 151659

151659

Parent Item: 646.3014

646.3014

Parent Item Name: Blade

Start Date: 9/19/2016

Required Date: 10/11/2016

Start Qty: 12.00

Required Qty: 12.00

Comments: IPP REV:A NEW ISSUE 12/11/09 JFS VERIFY BY: JLM

Component Item ID/ Item Name	Replacement Item ID	Mfg/ Purch	Bin Item	Primary Location	Last Location	Route Seq ID	Unit of Measure	Qty on Hand	Qty per Kit	Total Qty	Qty Issued	Date Issued	Status
MSTEEL-A2- B0.500X1.250		Purchased	No			100	f	48.9845	0.223	2.816842			

MSTEEL-A2-B0.500X1.250

AISI A2 TOOL STEEL BAR, 0.500 X 1.250

2.833'

DAS
20
9-89

16-11-29

Location

Loc Qty

Loc Code

MAT

0.3125

M134172

0.3125

MAT010

48.672

M126438

5.452

M127494

0.22

M133923

0.2

M135558

19.8

M135710

23

2.833

DQA: _____ Date: _____



WORK ORDER NON-CONFORMANCE / UPDATE

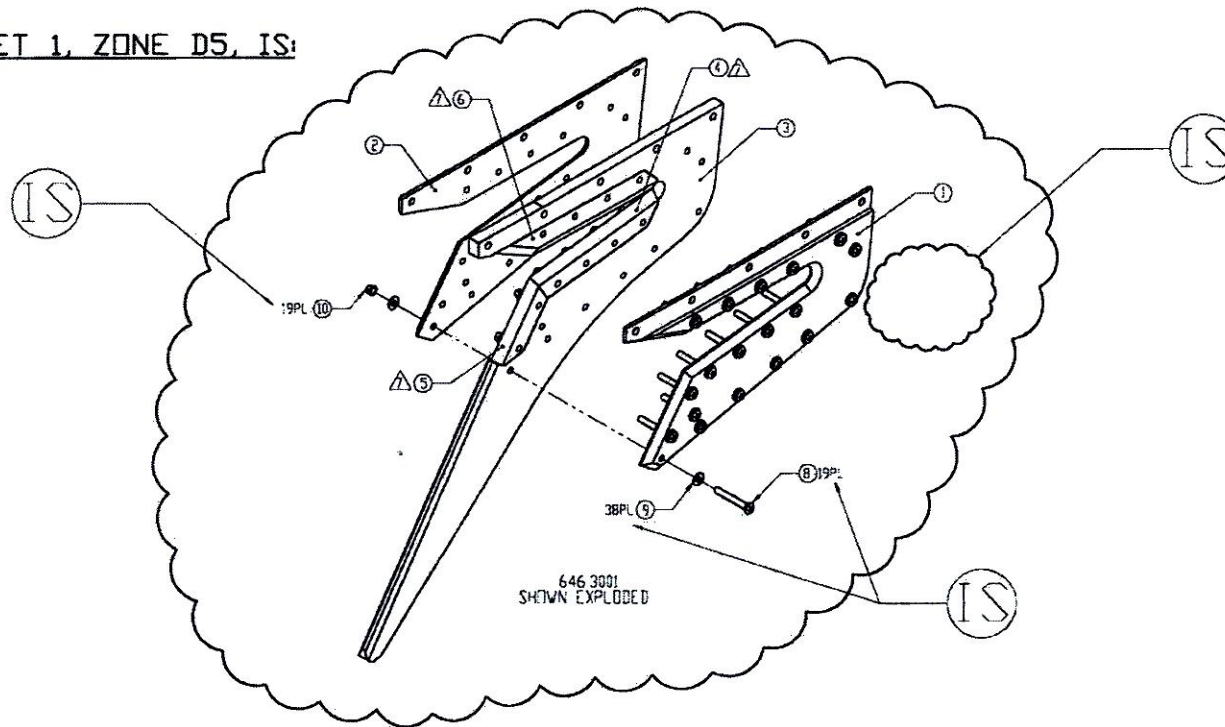
QA Closed: _____ Date: _____

Work Order update only ☐

Work Order: _____ Part No. _____ NCR No. _____	DISPOSITION Rework ☐ Scrap ☐ Use-as-is ☐ Suspected Unapproved ☐	AGAINST DEPARTMENT/PROCESS Skid-tube ☐ Machining ☐ Thermoforming ☐ Large Fab ☐ Cross tube ☐ Small Fab ☐ Finishing ☐ Composite ☐ Water Jet ☐ Prod. Eng. Coord. ☐ Rec/Store/Packaging ☐ Supplier ☐ Engineering ☐ Quality ☐ Other ☐			
Date :	Step #:	QTY Effective :		MRB (QSI042) Approval	
Description Work Order Deviation		Disposition		Completed By	
				Lead hand / Supervisor Approval Verification	
				QC / QA Coordinator Approval	
Root Cause		FAULT CATEGORY			
Environment ☐ Design ☐ Doc/Data ☐ Equip/Tooling ☐ Handling/Pre ☐ Material ☐ Internal Transport ☐ Tribal Knowledge ☐ LOA ☐ Substation ☐ Past Expiry Date ☐ Misidentified ☐	No Re-verification ☐ Operator ☐ Offset/Setup ☐ Supplier ☐ Training ☐ Use for Testing ☐ Poor Information ☐ Rushing ☐ Product Improvement ☐ Process Improvement ☐ Manufacturing Process ☐ Past Due ☐	Pressure/Forced ☐ Bending ☐ Centre Not Concentric ☐ Cracks ☐ Crimp/Kink/Ripple/Wave ☐ Cuffs ☐ Crushing ☐ Heat Treat ☐ Wave/Twist in Tube ☐ Marks/Chatter ☐	Temperature/Cure ☐ Set-up ☐ BOM/Route ☐ Broken/Damage/Defect ☐ Inspection Incomplete/Unqualified ☐ Contamination ☐ Countersink ☐ Cut Too Short ☐ Instructions Incomplete/Unclear ☐ Drill Holes ☐	Power Loss/Surge ☐ Folio/Program ☐ Grain ☐ Weld ☐ Wrong Stock Pulled ☐ Out of Sequence ☐ Off-set ☐ Misabeled ☐ Fit/Function ☐ Misaligned/off center ☐	Positioned Wrong ☐ Outside Dimensions ☐ Over/Under tolerance ☐ Part Incorrect ☐ Part Lost/Missing ☐ Part Moved ☐ Drawing ☐ Finish ☐ Misread ☐ Turning Sequence ☐
OTHER : _____					

APICAL INDUSTRIES, INC.	ENGINEERING CHANGE NOTICE NO. 02195		SHEET 1 OF 4	
	DWG NO. 646.3000	REV: N/C	PREPARED BY S. HUFF	DATE: 01/05/09
	EFFECT ON DWG ☐ INC. ☒ UNINC.			
	DWG TITLE: LOWER CUTTER ASSY			
APPROVED BY: ENGR <i>[Signature]</i>		MFG <i>[Signature]</i>	QC <i>[Signature]</i>	EFF: NEXT ORDER
TRANSACTION CODES (TC): A-ADD C-CREATE R-REVISE D-DELETE		REASON: REMOVED RIVETS IN FAVOR OF ADDITIONAL SCREWS		

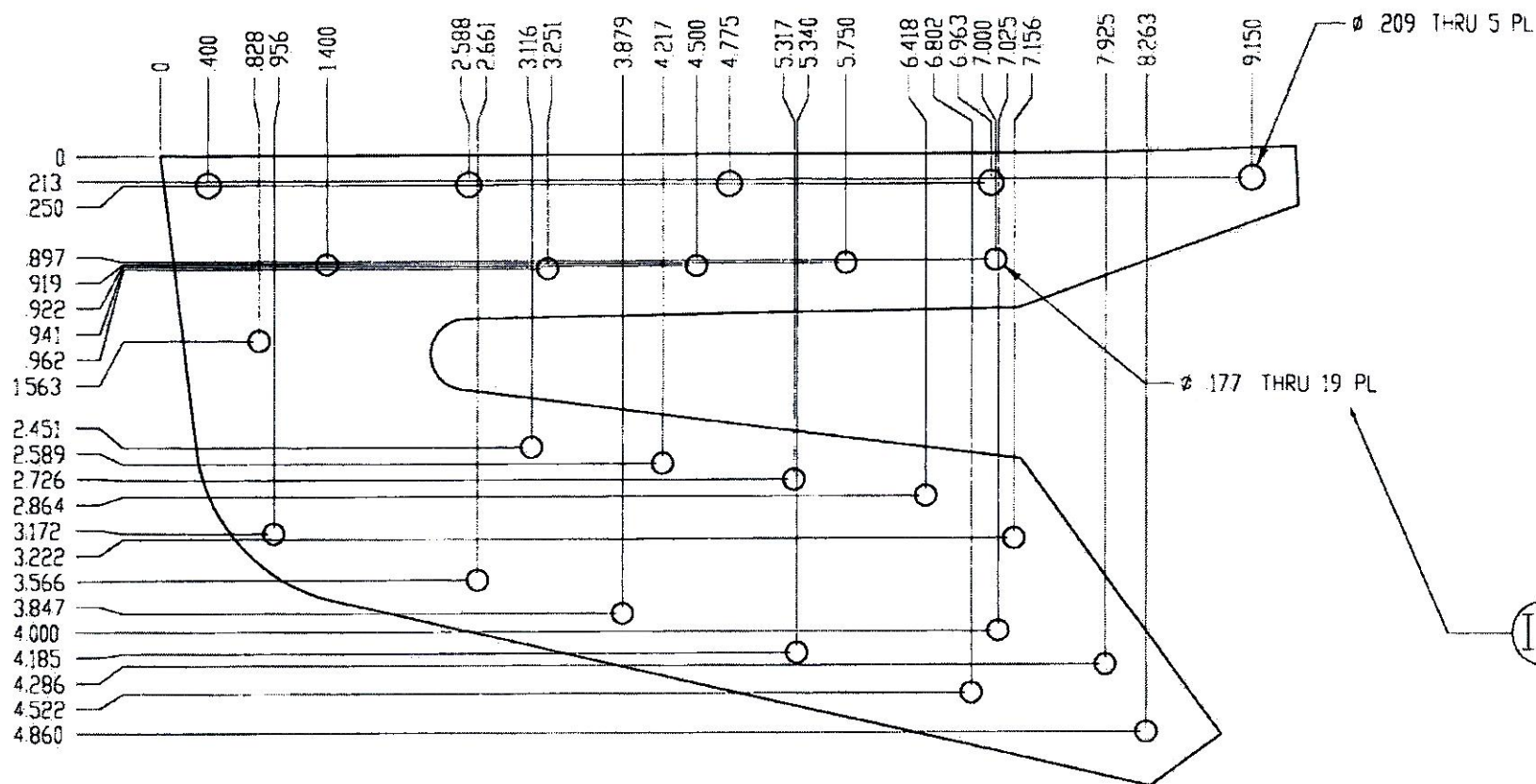
SHEET 1, ZONE D5, IS:



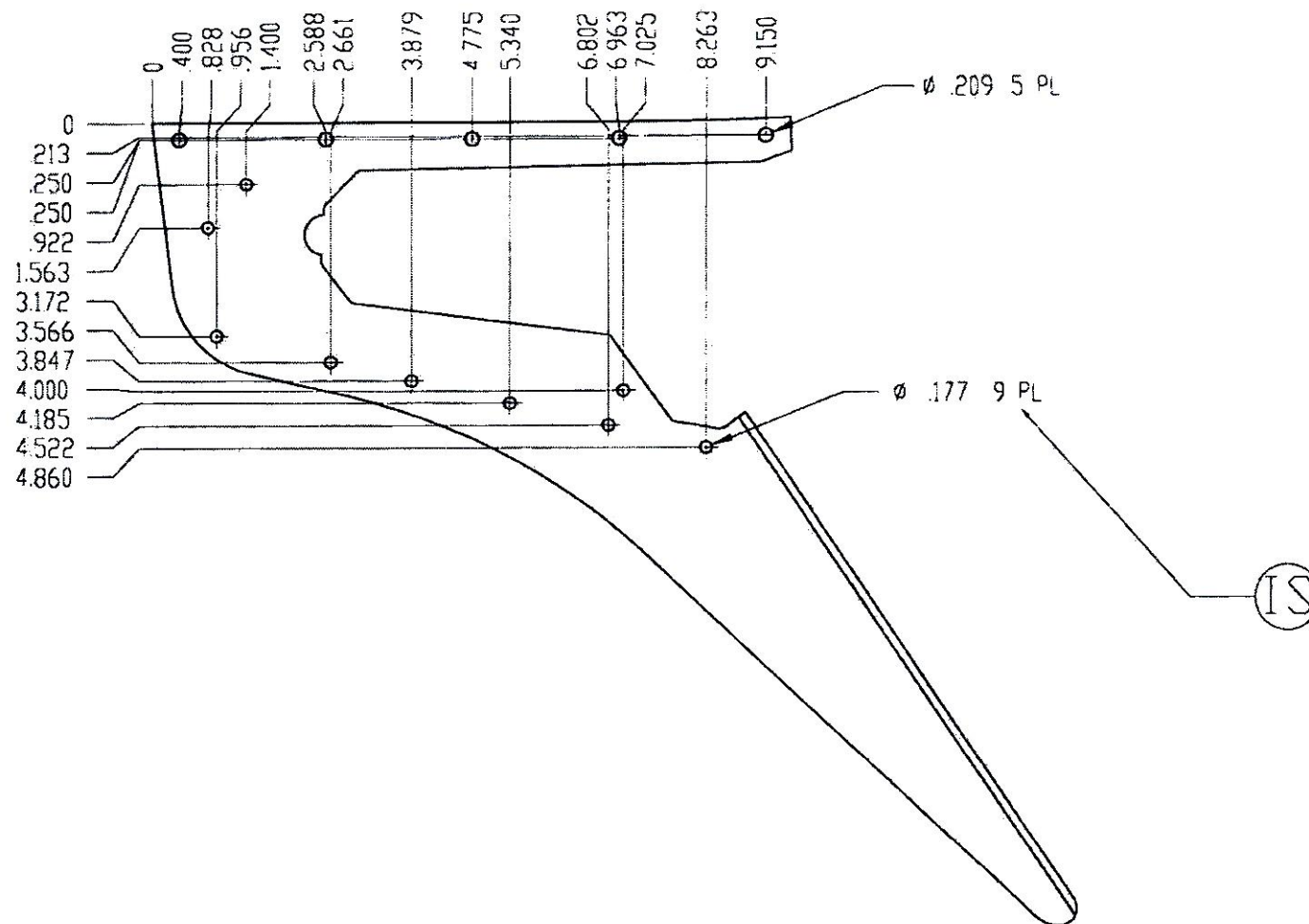
SHOP COPY
RETURN TO
ENGINEERING
UNCONTROLLED COPY
SUBJECT TO AMENDMENT
WITHOUT NOTICE
WORK ORDER
NO. IS1659MLJ
16-10-06

10	R	601.1541	19	LOCKNUT	MS21042L08
9	R	601.2764	38	WASHER	NAS1149FN832P
8	R	601.2765	19	SCREW	MS27039-0819
7	D	601.2766	2	RIVET	MS20470AD5-18
			.3001		
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION
DOCUMENTS EFFECTED:					CHANGE CATEGORY
☐ MDL ☒ INSTALL INSTRUC ☒ ICA ☐ FMS ☒ BOM					☐ MAJOR ☒ MINOR
DER REVIEW REQUIRED					☐ YES ☒ NO

SHEET 3 IS:



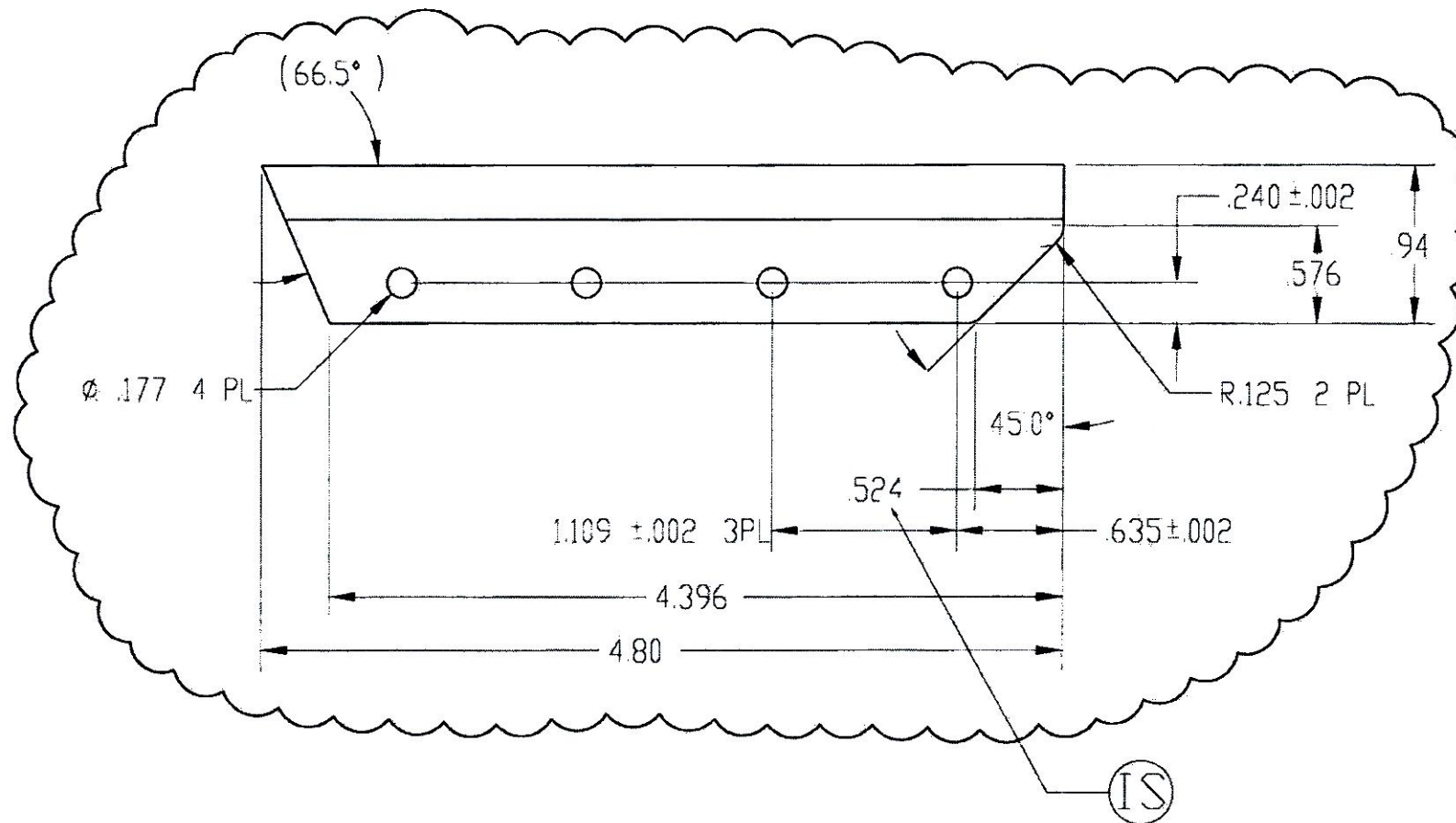
F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

SHEET 5 IS:

SECTION F-F

F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

SHEET 6, ZONE C4, IS:

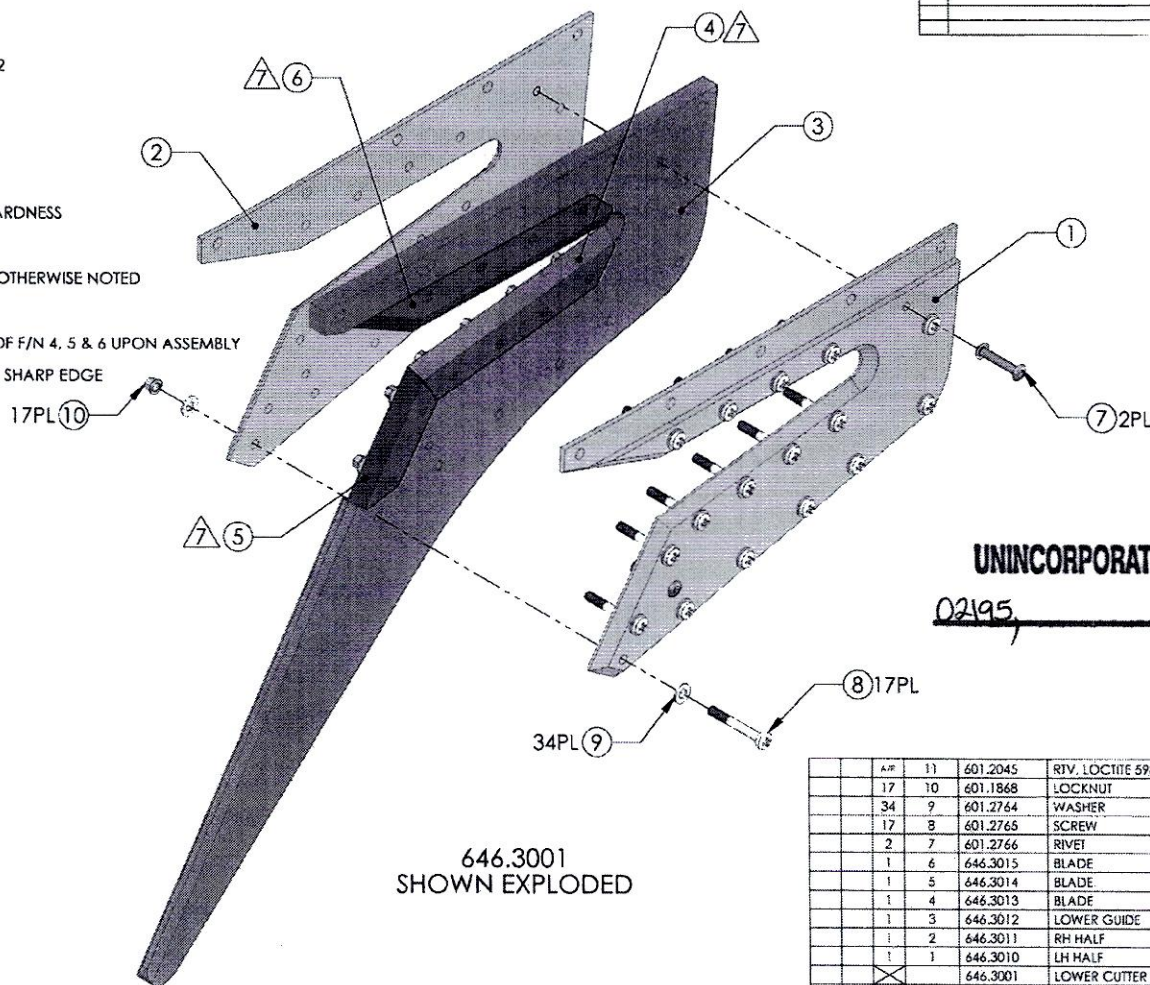


F/N	TC	PART NUMBER	QTY	DESCRIPTION	MATERIAL/SPECIFICATION

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NOTES:

- 1 MATERIAL: ALUMINUM 7075-T651 PER AMS-QQ-A-250/12
- 2 FINISH: HARD ANODIZE IAW MIL-A-8625 TYPE III, CLASS 2, COLOR BLACK; CARDINAL 4860-50 PRETREATMENT PRIMER PRIME IAW MIL-P-23377J TYPE I CLASS N
- 3 MATERIAL: AISI A2 TOOL STEEL
CONDITION: ANNEALED
POST PROCESS: HEAT TREAT TO 58-62 RC ROCKWELL HARDNESS
- 4 FINISH: PRIME IAW MIL-P-23377J TYPE I CLASS N
- 5 DEBURR AND BREAK ALL SHARP EDGES EXCEPT WHERE OTHERWISE NOTED
- 6 IDENTIFY IAW MPP-120
- 7 APPLY F/N 11 AS REQUIRED TO ALL FAYING SURFACES OF F/N 4, 5 & 6 UPON ASSEMBLY
- 8 CUTTING EDGE INTENDED TO BE SHARP. DO NOT BREAK SHARP EDGE

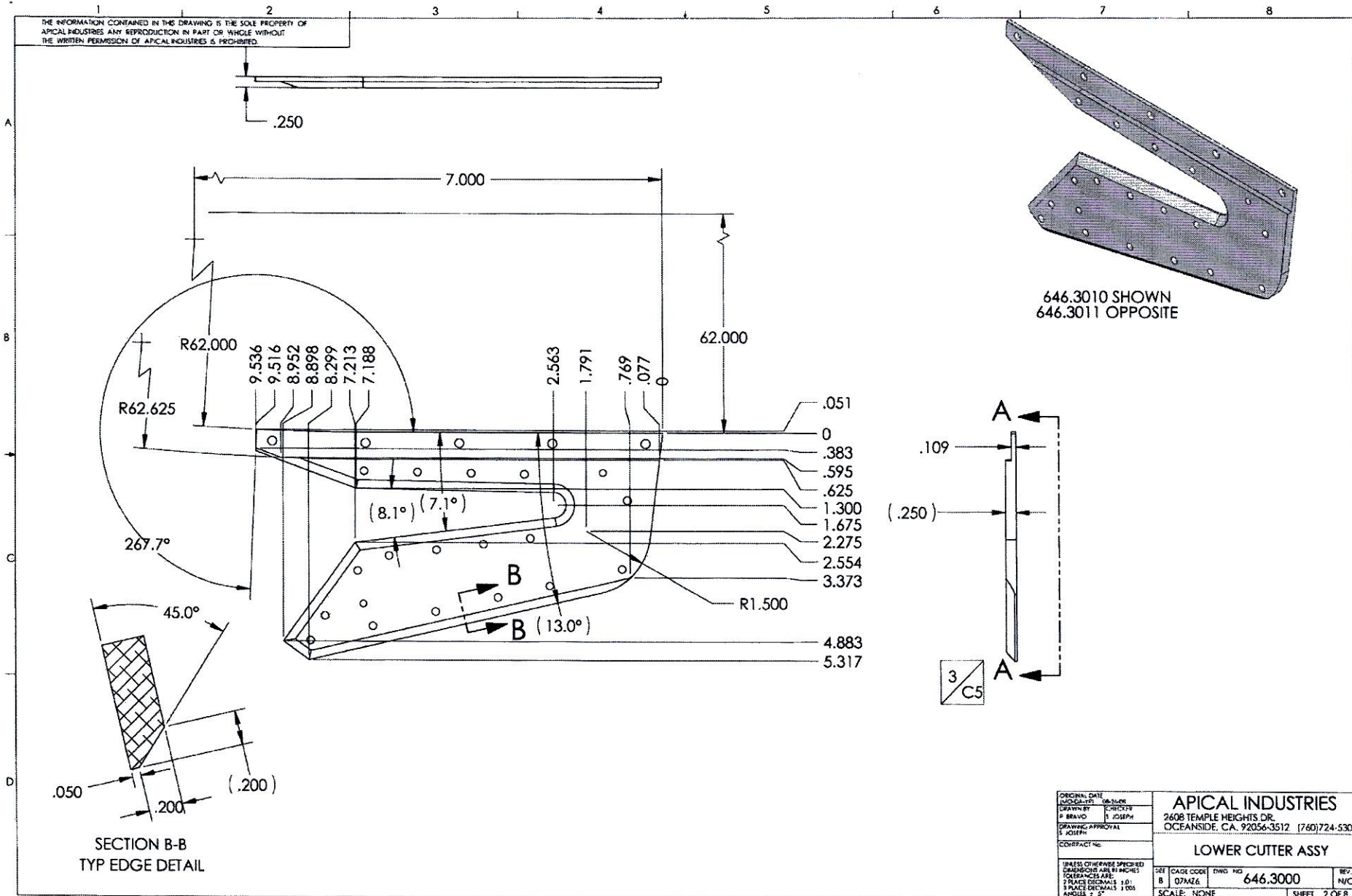


UNINCORPORATED ECN(s)

02195

QTY	REV	FIND #	PART #	DESCRIPTION	MATL	SPEC.
17	10		601.2045	RIV. LOCTITE 598		
34	9		601.1868	LOCKNUT	AMS1048-08	
17	8		601.2764	WASHER	HA31 1471N832P	
2	7		601.2765	SCREW	MS270M 0819	
1	6		601.2766	RIVET	MS20427-0408-11	
1	5		646.3015	BLADE		
1	4		646.3014	BLADE		
1	3		646.3013	BLADE		
1	2		646.3012	LOWER GUIDE		
1	1		646.3011	RH HALF		
1	1		646.3010	LH HALF		
			646.3001	LOWER CUTTER ASSY		
PARTS LIST						
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°						
ORIGINAL DATE: 08-20-08 DRAWN BY: J. JOSEPH P. REVISED: 08-20-08 DRAWING APPROVAL: 08-20-08 CONTRACT NO.:				APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300		
NEXT ASSY [S] 646.4000				LOWER CUTTER ASSY		
				REV: 07/M26 646.3000 N/C		
				SCALE: NONE SHEET 1 OF 8		

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646.3010 SHOWN
646.3011 OPPOSITE

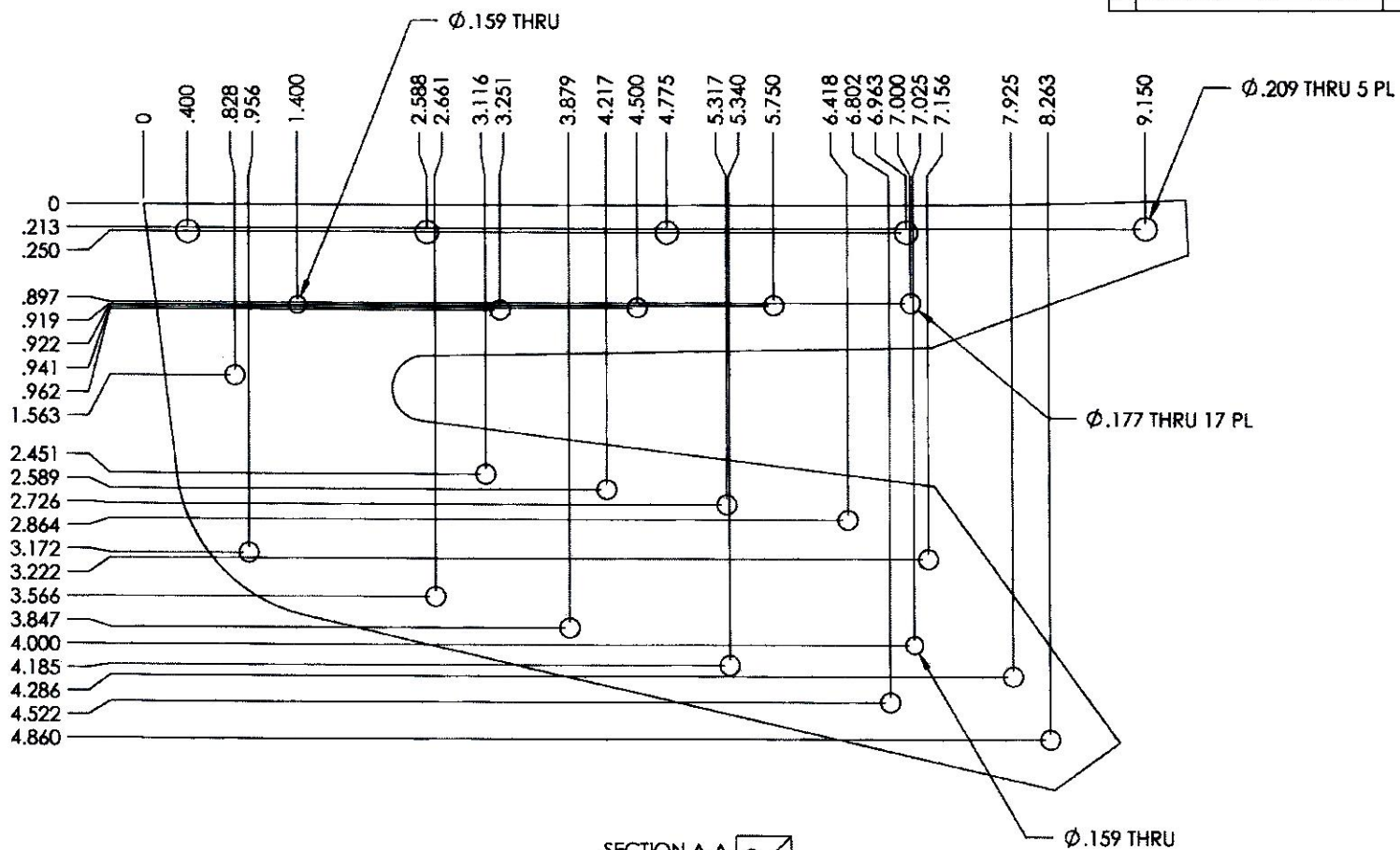
ORIGINAL DATE 10/01/91			
DRAWN BY P. BRAVO			
DRAWING APPROVAL S. JOSEPH			
CONTRACTING			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 1 PLACE DECIMALS ±.005 ANGLES ±.5°			
DEF	CAGE CODE	DWG NO	REV.
B	07AMZ6	646.3000	N/C
SCALE: NONE			SHEET 2 OF 8

APICAL INDUSTRIES
2608 TEMPLE HEIGHTS DR.
OCEANSIDE, CA. 92056-3512 (760)724-5300

LOWER CUTTER ASSY

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THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

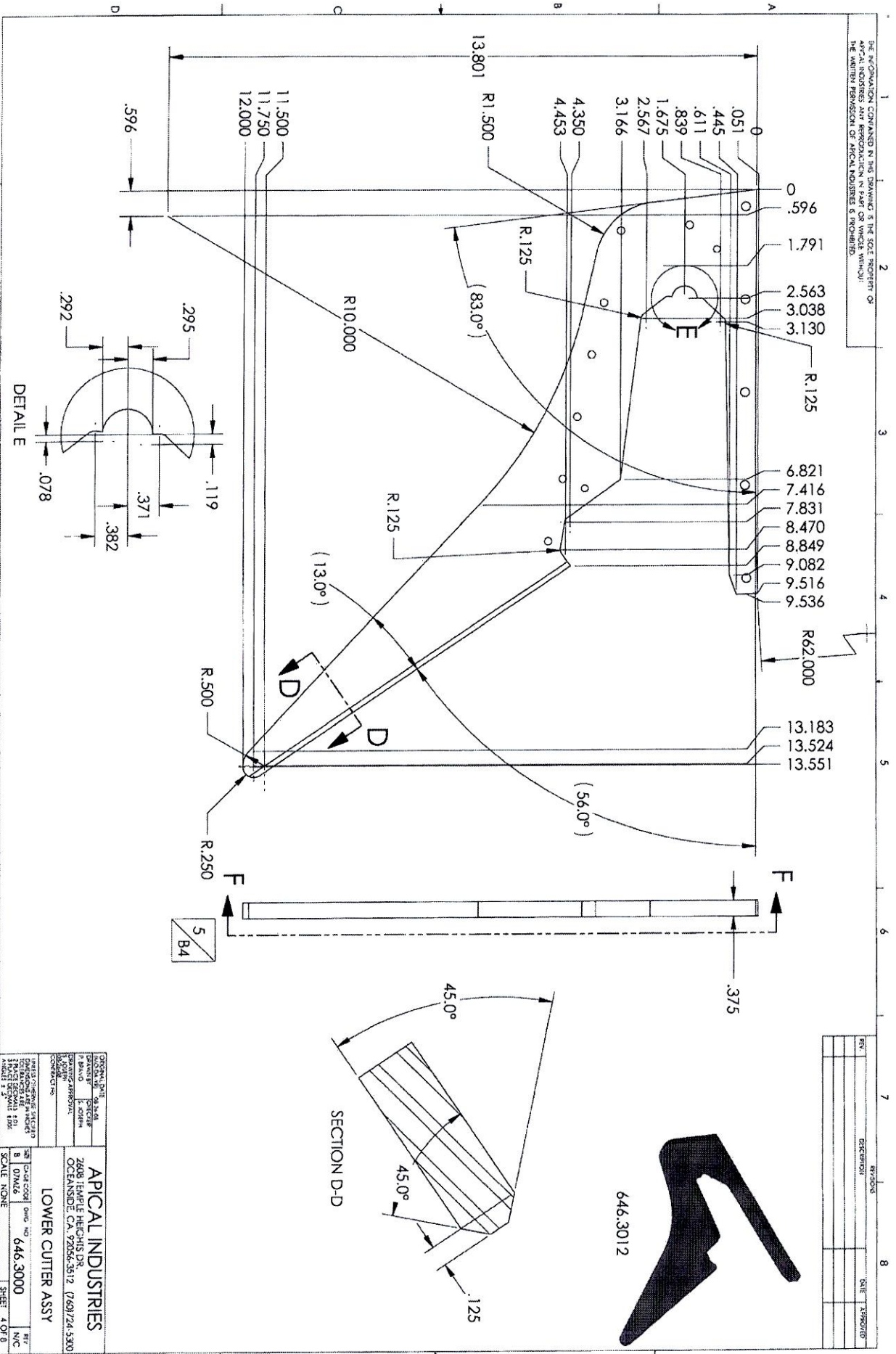
REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED



SECTION A-A 

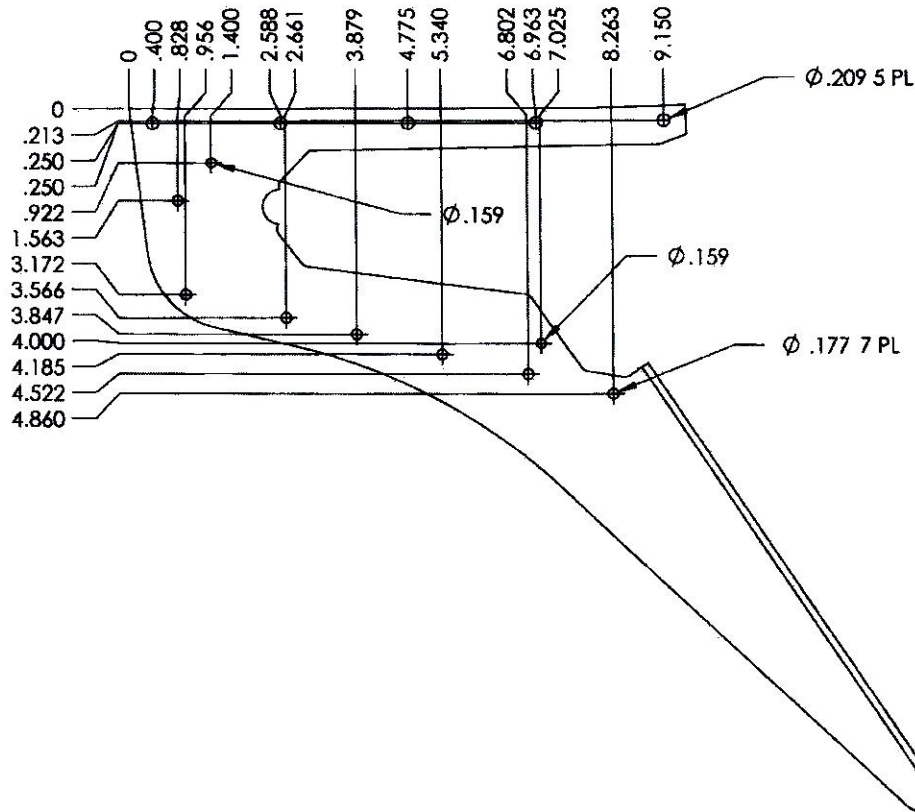
ORIGINAL DATE INVOICE 171 08-25-06	APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA 92056-3512 (760)724-5300		
DRAWN BY J. BRAYN			
CHECKED BY J. BRAYN			
DATE 08-25-06			
DEVIATION APPROVAL BY J. BRAYN	LOWER CUTTER ASSY		
DATE 08-25-06			
CONTRACT NO.			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES 7 PLACES DECIMALS ±.001 3 PLACES DECIMALS ±.01 2 PLACES DECIMALS ±.02 ALL DIMENSIONS IN INCHES SCALE 1:1			
SET	CAGE CODE	UNIT NO.	REV.
B	07046	646.3000	N/C
SCALE NONE			SHEET 3 OF 8

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REV.	DESCRIPTION	DATE	APPROVED



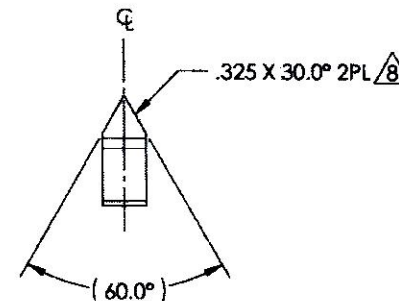
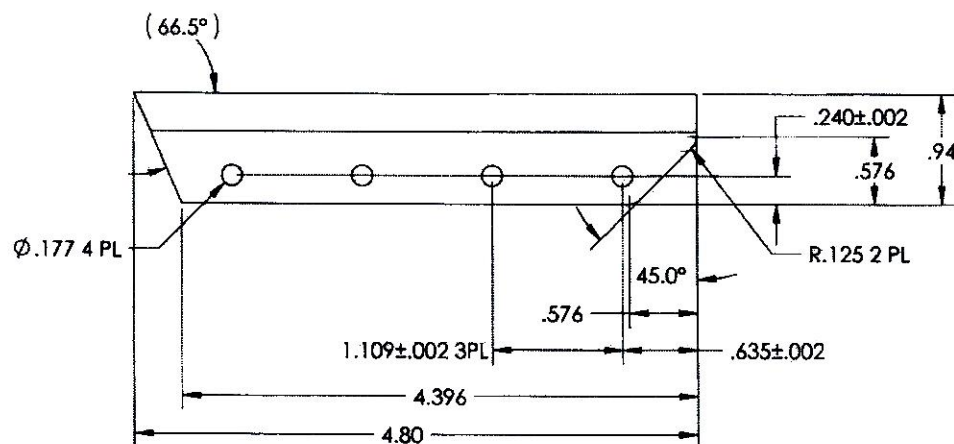
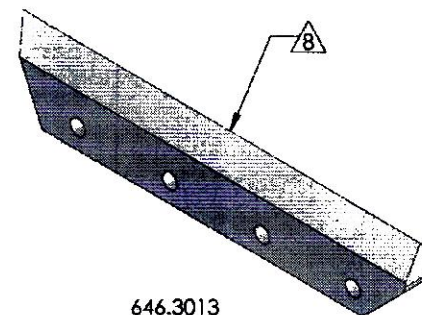
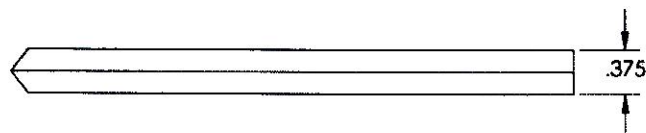
SECTION F-F



ORIGINAL DATE DESIGNED BY P. BRAVO DRAWING APPROVAL J. JOHNSON CHECKED BY J. JOHNSON		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 1 PLACE DECIMALS ± .01 2 PLACE DECIMALS ± .005 ANGLES ± 1°		DWG. NO. 646.3000	REV. R/C
SCALE: NONE		SHEET 5 OF 8	

THE INFORMATION CONTAINED IN THIS DRAWING IS THE SOLE PROPERTY OF APICAL INDUSTRIES. ANY REPRODUCTION IN PART OR WHOLE WITHOUT THE WRITTEN PERMISSION OF APICAL INDUSTRIES IS PROHIBITED.

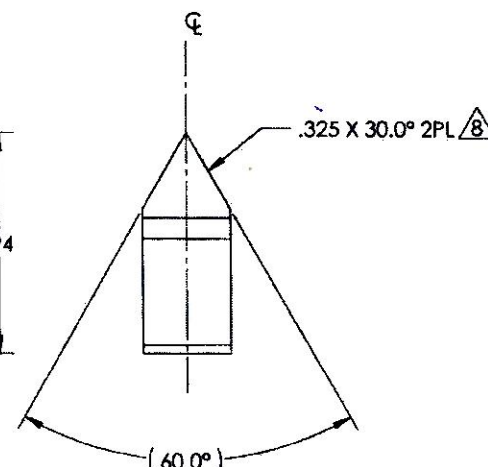
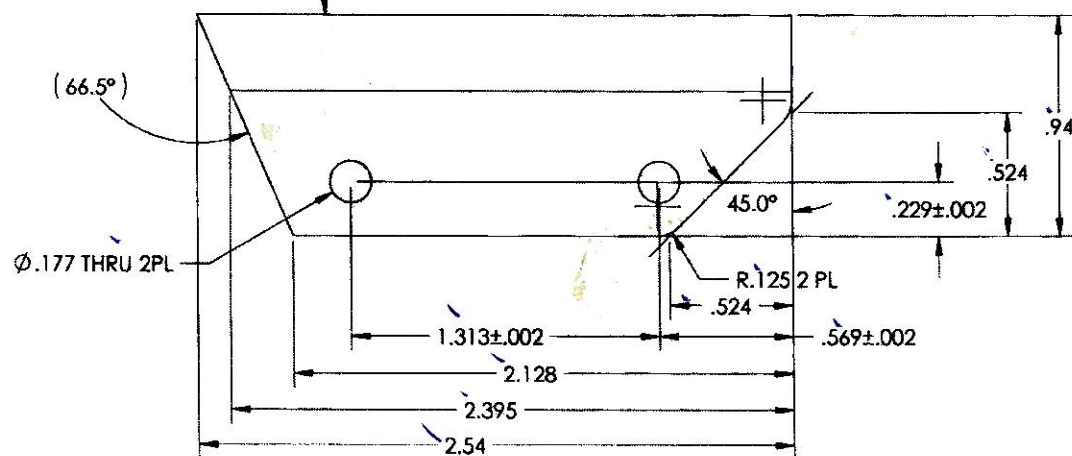
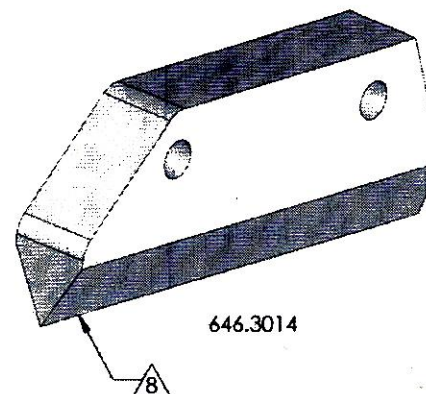
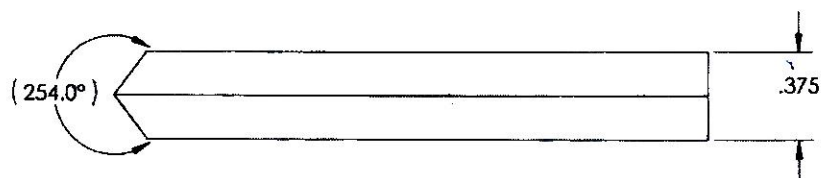
REVISIONS			
REV	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE 10-20-1988 DRAWN BY F. WENVO DRAWING APPROVAL S. JOHNSON CHECKED BY S. JOHNSON				APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300			
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES DECIMALS ARE .001 2 PLACES DECIMALS = .01 3 PLACES DECIMALS = .001 ANGLE $\pm$.5°				LOWER CUTTER ASSY			
SHEET	8	SCALE	NONE	DATE	NOV 1988	REV	N/A
646.3000				SHEET 6 OF 8			

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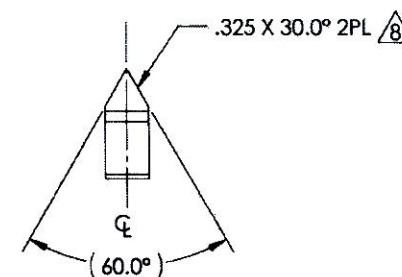
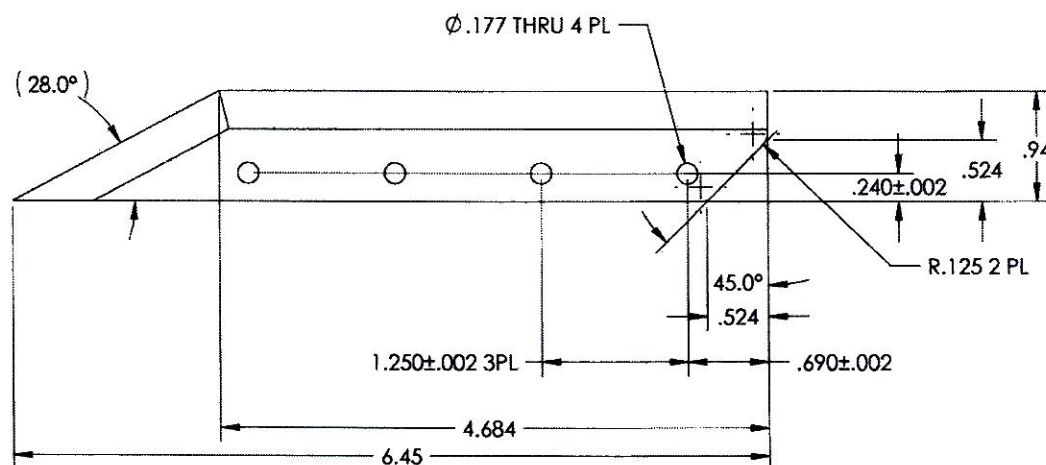
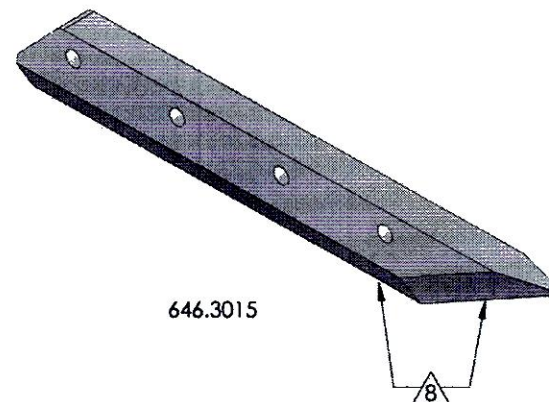
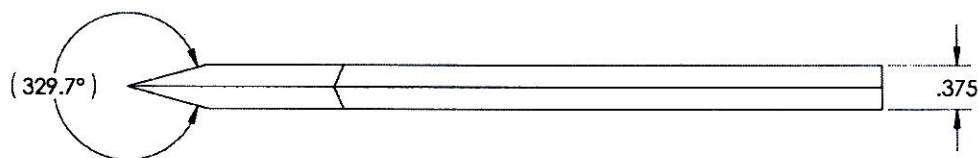
REV	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE REVISED DATE DRAWN BY P. BRAYO DRAWING APPROVAL S. JOSEPH CHECKED BY S. JOSEPH		APICAL INDUSTRIES 2608 TEMPLE HEIGHTS DR. OCEANSIDE, CA. 92056-3512 (760)724-5300	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.01 3 PLACE DECIMALS ±.005 ANGLES ±.5°		LOWER CUTTER ASSY	
MTI	CAGE CODE	QWG NO.	REV
B	07M126	646.3000	N/C
SCALE: NONE		SHEET 7 OF 8	

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REV	DESCRIPTION	DATE	APPROVED



ORIGINAL DATE 10-20-08		APICAL INDUSTRIES	
DRAWN BY P. PAVO		2608 TEMPLE HEIGHTS DR.	
DRAWN APPROVAL J. JOSEPH		OCEANSIDE, CA. 92056-3512 (760)724-5300	
CONTRACT NO.		LOWER CUTTER ASSY	
UNLESS OTHERWISE SPECIFIED DIMENSIONS ARE IN INCHES TOLERANCES ARE: 2 PLACE DECIMALS ±.010 3 PLACE DECIMALS ±.005 ANGLES ±.5°		REV B	N/C
SCALE NONE		DWG. NO. 646.3000	SHEET 8 OF 8



Dart Aerospace Ltd.
1270 Aberdeen Street
Hawkesbury, ON K6A 1K7
Tel: 613 632 9577
Fax: 613 632 1053

PURCHASE ORDER

Purchase Order ID **PO34487**

Purchase Order Date 12/1/2016

PO Print Date 12/14/2016

Page Number 1 of 2

Order From :

VC-MET004

METCOR INC.
560 BOUL. ARTHUR SAUVE
SAINT-EUSTACHE, QC J7R 5A8
CA

Ship To : DART AEROSPACE LTD
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
CANADA



Contact Name

Vendor Phone 450 473 1884

Ship To Contact

Ship To Phone

Ship Via: FedEx Overnight collect

Ship Acct:

Buyer

Chantal Lavoie

Customer POID

Customer Tax #

10127-2607

Terms

Net 30

Currency

CAD

FOB

FCA - (Free Carrier)

Line Nbr	Reference Vendor Part Number	Description/ Mfg ID	Req Date/ Taxable	CD	Req Qty/ Unit of Measure	PO Unit Price	Extended Price
	Line Comments		Promise Date				
	Delivery Comments						
1	151659	646.3014 BLADE	12/14/2016		12.00	\$24.42	\$293.00
			Yes				
			12/14/2016				

FINISH: HEAT TREAT TO 58-62 RC
ROCKWELL HARDNESS

PART ARE MADE FROM AISI A2 TOOL STEEL

PLEASE NOTE: DETAIL C OF C REQUIRED

SP/6-12-15

Line Total:

\$293.00

2	71401-45	PROCUREMENT QUALITY CLAUSES	12/14/2016		1.00	\$0.00	\$0.00
			No				
			12/14/2016				
	Procurement Quality Clauses						
	A005 right of entry						
	A012 chemical and physical test report						
	A020 non-destructive test/inspection identification						
	A021 dart aerospace processing						
	A024 process certifications						
	A026 certification of material conformance						

Note:

DAS
38
9-89

12/14/2016

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ
ST-EUSTACHE, QC J7R 5A8
Tel: 450-473-1884 / Fax: 450-491-5498

Reçu de livraison

Delivery Receipt

BON DE TRAVAIL Order	EXPÉDITEUR Shipper ID	BON D'EXPÉDITION Shipper
315590	1	115883

EXPÉDITION COMPLÈTE / Shipped Complete

CLIENT /Customer 215

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053



LIVRÉ À / Shipped To

DART AEROSPACE
1270 ABERDEEN
HAWKESBURY, ON K6A 1K7
Ph: 613-632-5200
Fax: 613-632-1053

COMMANDE DU CLIENT Customer PO	BON DE LIVRAISON DU CLIENT Customer Shipper No.	TYPE DE MATÉRIEL Material Type	DATE DE LA COMMANDE Order Date	TRANSPORTEUR Carrier
PO34487		A2	2016/12/2	fed
QUANTITÉ Quantity	No. PIÈCE Part No.	NOM DE LA PIÈCE Part Name	DESCRIPTION DE LA PIÈCE Part Description	POIDS Weight
12	646.3014			2,

(12) 646.3014

1 BOITE DE CARTON

Sp/6-12-15

TYPE DE CONTENEUR Container Type	# DE CONTENEURS # Of Containers	COMMENTAIRES CONTENEUR Container Comments
BOITE DE CARTON	1	

CERTIFICAT

EMPAQUETAGE Packing	
------------------------	--

DEC 09 2016

QUANTITÉ EXPÉDIÉE / Quantity Shipped : 12
POIDS EXPÉDIÉ / Weight Shipped : 2,00
QUANTITÉ RESTANTE / Quantity Remaining : 0
POIDS RESTANT / Weight Remaining : 0,00

CERTIFICAT

QUANTITÉ EXPÉDIÉE /Quantity Shipped:	12
POIDS EXPÉDIÉ / Weight Shipped :	2,00

Signature:

DAS
38
9-89

Date:

EXPÉDIÉ LE / Shipped On : 2016/12/06

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
315590	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K8A 1K7

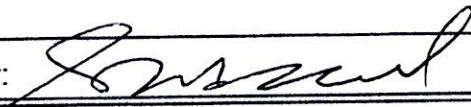
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COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
PO34487	N/A	A2		
<u>SPÉCIFICATIONS DU PROCÉDÉ</u> processing specifications				
VAC HARDEN				
HARDEN AND TEMPER				
EXIGENCE / requirement SPÉCIFICATIONS / specified TESTS EXÉCUTÉS / performed RÉSULTATS DE TESTS / results				
HARDNESS		58 - 62 HRC	5	61 - 62 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
12	2	646.3014 (12) 646.3014 1 BOITE DE CARTON		

2016-12-12
G. D. R.

COMMENTAIRES / comments

APPROUVÉ par / Approved by:



DATE: 2016-12-06

METCOR INC.

560 BOUL. ARTHUR-SAUVÉ, ST-EUSTACHE, QC, J7R 5A8

Tél.: 450-473-1884

Télécopieur / Fax administration: 450-491-5498

Télécopieur / Fax production: 450 491-6454

Certificat de Conformité Détail

Detailed Certificate of Compliance

BON DE TRAVAIL order	CHARGEMENT load
315590	1

CLIENT / customer 215

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

LIVRÉ À / shipped to:

DART AEROSPACE

1270 ABERDEEN

HAWKESBURY

ON K6A 1K7

1

COMMANDE DU CLIENT customer po	CLASSIFICATION PIECE part classification	MATÉRIEL material	MAÎTRE D'OEUVRE prime contractor	PROGRAM
PO34487	N/A	A2		
SPÉCIFICATIONS DU PROCÉDÉ processing specifications VAC HARDEN HARDEN AND TEMPER				
EXIGENCE / requirement	SPÉCIFICATIONS / specified		TESTS EXÉCUTÉS / performed	RÉSULTATS DE TESTS / results
HARDNESS	58 - 62 HRC		5	61 - 62 HRC
QUANTITÉ quantity	POIDS weight	DESCRIPTION DES PIÈCES parts description		
12	2	646.3014 (12) 646.3014 1 BOITE DE CARTON		

COMMENTAIRES / comments

VAC HARDEN 1800F, 1:30 HR
DOUBLE TEMPER 400F, 2 HRS

DAS
38
9-89

Heat treatment (HT) was performed with equipment that meets the requirements of requested specification. All HT operations were performed in compliance with the required HT specification and all verifications have been performed and documented. No unauthorized changes were performed in regards to the HT. We certify that the material was manufactured, sampled, tested and inspected in accordance with the material specification and the purchase order and was found to meet the requirements.

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Le traitement thermique (TT) a été fait en utilisant des équipements en conformité avec la spécification demandée. Toutes les opérations de TT ont été faites en conformité avec les requis de la spécification demandée et toutes les vérifications et les tests demandés ont été faites et documentés. Aucun changement n'a été faite par rapport au TT. On certifie que le matériel a été fabriqué, échantillonné, testé et inspecté en accord avec les spécifications du matériel et le bon de commande et le matériel rencontre les exigences spécifiées.

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APPROUVÉ par / Approved by:

Isabel Otero

Isabel Otero
QA Technician



DATE: 2016-12-06